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42 Physiological response of subjects wearing vapour permeable anti-exposure garments during immersion

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Vapour permeable constant wear anti-exposure garments may effectively protect air crew during cold water immersion.

The effects of environmental stresses simulating those encountered by downed air crew wearing anti-exposure garments were evaluated. Test conditions were water temperature = ***72°C;*** air temperature = **0.0°C;** and an air velocity of ***7.0*** M/S litres per second. All testing was performed in calm water. Fourteen subjects aged 21 to 40 were studied in eight configurations for maximum 120 minute exposures. The eight configurations consisted of intact and damaged polytetraflurethylene (PTFE) antiexposure suits worn with various combinations of cotton/lpolypropylene and olefin liners. Parameters used to as5ess physiological effects were: duration (DUR), rectal temperature (Tsk), body temperature (Tbd), heart rate (HR), total body heat loss (S), and subjective comfort.

Mean duration of ail configurations were greater than 109 minutes. with no significant differences observed. Significant differences were observed among configurations for the Tsk, Tbd, HR, and S, values being most extreme when a two inch tear was present in the PTFE suits were with a wet cotton/polypropylene liner.

When intact, the vapour permeable PTFE anti-exposure suits appears to provide effective protection during cold water immersion, independent of underlying insulative garments. Since leakage reduced the protection provided by the suits, further study of its impact on protection appears just fine.